Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.   (currently amended) A <u>device-implemented</u> routing system comprising:

a plurality of <u>device-implemented</u> routing resources<u>, including:</u> ~~; and~~

<u>device-implemented logic resources including routing processes to determine routing for received packets and forwarding processes to forward the received packets to an appropriate destination; and</u>

<u>device-implemented physical resources comprising control resources and data resources, the control resources including at least one routing table and the data resources including physical specifications of the routing system</u>; and

a plurality of <u>device implemented</u> virtual routers ~~configured~~ to <u>reconfigurably</u> share the <u>device-implemented</u> routing resources in accordance with <u>a plurality of</u> programmably modifiable resource sharing <u>configurations that may be reconfigurably modified by a user, in order to implement different device-implemented virtual router configurations based on different sets of network requirements</u> ~~configuration~~.

2-7.   (canceled)

8.   (currently amended) A network point-of-presence (POP) comprising:

a <u>single</u> physical router ~~system~~ having a plurality of resources<u>, including</u> [[;]]

logic resources, including routing processes to determine routing for received packets and forwarding processes to forward the received packets to an appropriate destination; and

physical resources comprising control resources and data resources, the control resources including at least one routing table and the data resources including physical specifications of the single physical router;

at least one backbone router, having a routing capacity, implemented, at an end-point of a high capacity network link, as a virtual router by the single physical router system; and

at least one regional router, having a routing capacity that is below the routing capacity of the at least one backbone router, implemented as a virtual router by the single physical router system, where wherein

the backbone virtual router and the regional virtual router to reconfigurably share resources of the single physical router based on a plurality of configurations and an input by a user, in order to implement different device-implemented virtual router configurations based on different sets of network requirements system and wherein the resources that are shared between the backbone virtual router and the regional virtual router are modifiable by a user.

9.   The network POP of claim 8, further comprising:

ports connecting the backbone virtual router to a high capacity transit network; and

ports connecting the regional router to a metropolitan area network.

10-15.   (canceled)

16.   (currently amended) A method<u>, performed by a single device in a</u>
<u>network,</u> comprising:

allocating a first set of resources as shared resources;

allocating a second set of resources as non-shared resources<u>, where the</u>
<u>allocating the first set of resources and the allocating the second set of resources</u>
<u>include:</u>

<u>allocating logic resources, including routing processes to determine</u>
<u>routing for received packets and forwarding processes to forward the received</u>
<u>packets to an appropriate destination</u>; and

<u>allocating physical resources comprising control resources and data</u>
<u>resources, the control resources including at least one routing table and the data</u>
<u>resources including physical specifications of the single device; and</u>

implementing a plurality of virtual routers based on a <u>reconfigurable</u> sharing
of resources from the first set of resources between the virtual routers and based
on <u>reconfigurably</u> independently assigning resources of the second set of resources
to each of the virtual routers, <u>where</u> ~~wherein~~ the resources included in the first set
of resources and the resources included in the second set of resources <u>may be</u>
<u>reconfigurably modified by a user, in order to implement different device-</u>
<u>implemented virtual router configurations based on different sets of network</u>
<u>requirements</u> ~~are user programmable~~.

17-22.   (canceled)

23.   (currently amended) A device-implemented router ~~routing system~~ comprising:

a device-implemented means for performing routing processes to determine routing for received packets;

a device-implemented means for performing forwarding processes to forward the received packets to an appropriate destination;

a device-implemented means for implementing control resources;

a device-implemented means for implementing data resources, including physical specifications of the device-implemented router; and

a device-implemented means for implementing ~~running~~ a plurality of virtual routers that share, ~~based on a user programmable configuration,~~ ones of the device-implemented means for performing routing processes, the device-implemented means for performing forwarding processes, the device-implemented means for implementing control resources, and the device-implemented means for implementing data resources, based on a plurality of programmably modifiable resource sharing configurations that are programmably modifiable by a user, in order to implement different device-implemented virtual router configurations based on different sets of network requirements.

24.   (currently amended) The routing system of claim 23, where ~~wherein~~ the means for performing routing processes includes means for building routing tables and forwarding tables based on network topology.

25.   (currently amended) The routing system of claim 24, <u>where</u> <s>wherein</s> the means for performing forwarding processes includes means for comparing information in packet headers to the forwarding tables.

26.   (currently amended) The routing system of claim 24, <u>where</u> <s>wherein</s> the means for implementing control resources includes means for storing the routing and forwarding processes.

27.   (canceled)

28.   (new) A method, performed by a single router in a network, comprising:

allocating a set of routing resources as shared resources, where the allocating the set of resources includes:

allocating logic resources, including routing processes to determine routing for received packets and forwarding processes to forward the received packets to an appropriate destination; and

allocating physical resources comprising control resources and data resources, the control resources including at least one routing table and the data resources including physical specifications of the single device;

selecting, by a user, a first desired resource sharing configuration, based on a first set of network requirements, to be implemented by a plurality of virtual routers, from a plurality of routing resource sharing configurations, the plurality of routing resource sharing configurations including:

a first configuration, where the plurality of virtual routers do not share resources;

a second configuration, where the plurality of virtual routers only share control resources;

a third configuration, where the plurality of virtual routers only share data resources;

a fourth configuration, where the plurality of virtual routers only share data resources and forwarding processes;

a fifth configuration, where the plurality of virtual routers only share data resources and routing processes;

a sixth configuration, where the plurality of virtual routers only share data resources, forwarding processes and routing processes;

a seventh configuration, where the plurality of virtual routers only share data resources and control resources;

an eight configuration, where the plurality of virtual routers only share data resources, forwarding processes and control resources;

a ninth configuration, where the plurality of virtual routers only share data resources, routing processes and control resources; and

a tenth configuration, where the plurality of virtual routers share data resources, routing processes, forwarding processes and control resources;

implementing the plurality of virtual routers based on the first desired resource sharing configuration;

implementing a second desired resource sharing configuration, different than the first desired resource sharing configuration, based on a second set of network

requirements, different than the first set of network requirements.